



Stagflation! A Talk with Economist Walter Heller

Author(s): Harold G. Shane

Source: *The Phi Delta Kappan*, Mar., 1975, Vol. 56, No. 7 (Mar., 1975), pp. 474-478

Published by: Phi Delta Kappa International

Stable URL: <https://www.jstor.org/stable/20297982>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



Phi Delta Kappa International is collaborating with JSTOR to digitize, preserve and extend access to *The Phi Delta Kappan*

JSTOR

STAGFLATION!

By Harold G. Shane

A TALK WITH ECONOMIST WALTER HELLER

Among forecasts and advice from the chief economic adviser to Presidents Kennedy and Johnson: short-term improvement, long-term necessity for government-imposed morality in the use of the earth's resources

Early in 1975 it became clear that the U.S. was beset by a new economic demon, "stagflation." Although double-digit inflation persisted, the gross national product was dropping and unemployment was increasing so rapidly that figures on the jobless were out of date by the time they were published.

Americans over 50 years old felt the chill of poverty that had lingered in their bones since the Great Depression. Those under 30 were troubled and sometimes bewildered by the bust that had replaced the boom years they had known since babyhood. Along with the general population, educators had good cause to be alarmed by current economic trends and their impact on local support for schools, federal funding, salaries, and retirement systems.

With economic problems so ubiquitous, it seemed timely to bring *Kappan* readers an interview with Walter W. Heller, Regents' Professor of Economics at the University of Minnesota. This distinguished scholar served as chief economic adviser to Presidents John F. Kennedy and Lyndon B. Johnson in the sixties. Among his recent books, the best known include *Economic Growth and Environmental Quality: Collision or Coexistence?* (1973); *Monetary Versus Fiscal Policy, A Dialogue with Milton Friedman* (1969); *Fiscal Policy for a Balanced Economy, an OECD Report*

HAROLD G. SHANE (*Indiana University Chapter*) is university professor of education, Indiana University, and an editorial consultant to the *Kappan*. He is a friend and former college classmate of Mr. Heller. This is the second in a series of interviews with prominent figures whose information and opinions on matters of social importance can profitably be shared, the editors believe, with the education community.

(1968); and *New Dimensions of Political Economy* (1968). He is immediate past president of the American Economic Association.

This interview was taped on January 8, 1975, at Mr. Heller's home in Minneapolis.

SHANE: Walter, despite the gloomy economic prophecies, can you identify at least a few optimistic developments that suggest such happy possibilities as less inflation and improved employment later in 1975 or 1976? In other words, will our economic situation and problems tend to "bottom out" a bit, then improve in the next 12 to 18 months? Or will they remain about the same, deteriorate even more, or slide into a genuine thirties-style depression?

HELLER: I think this is an inflection point that portends a bottoming out of our troubles sometime later in 1975. Although things will get worse before they get better, one can be quite hopeful that inflation will be easing all through 1975. In place of our double-digit inflation, we will probably fall below a 6% rate by the end of the year.

Now, what's working in our favor? For one thing, the food and fuel price explosions have pretty well worked their way through the economy. Second, what I call the "pop-up effect" that occurred after we took off wage and price controls over a year ago is pretty well behind us. And third, the fears that many people have that we're condemned to double-digit wage increases are, I believe, unfounded.

The weakness of the labor market — the fact that 7½ million people will be unemployed by the middle of this year — although a bleak and unhappy prospect, will have a retarding effect on wage increases. All told, then, the forces that make for inflation should be weak-

ening all year, and a year from now inflation will be increasing at less than half its 1974 rate.

S: In this temporary twilight of our prosperity, it's very good to have a positive forecast. Now let me ask how you explain, in layman's language, the difference between a recession and a depression? Does a recession become a depression when double-digit unemployment occurs?

H: Perhaps the easiest approach to this question is to take a look at what conditions were like in the Great Depression of the thirties. Between 1931 and 1941, we averaged 19% unemployment. The rate ran from a top of 25% to a low of 14%. Now, at worst, we're looking down the gun barrel of perhaps an 8% to 8½% rate of unemployment. While this is the worst since the Great Depression, it still is by no means as severe as a depression. Furthermore, in the threadbare thirties, our gross national product, *our total output*, dropped by about 35%. From the peak to the trough of the current recession — that is, from the end of 1973 to perhaps the middle of 1975 — we will have suffered no more than a 6% drop in real output.

S: Let me press you. If we should have a full-scale depression, how would we know?

H: Well, I'll have to give you a typical economist's answer: namely, it depends. If we were to run into, say, 12% unemployment and a 10% to 15% drop in total output, we'd be in real trouble. If profits should shrink by 50%, instead of the 20% we anticipate this year, why then I think you'd have to begin to call our economic situation a depression instead of a recession.

S: As of today, in mid-winter, 1975, do you consider inflation or unemployment the more serious problem?

H: If you are looking at the reasonably short run, inflation has been replaced by recession as public enemy number one.

S: Why?

H: Partly because we have already squeezed the economy so hard that the inflation problem is ebbing. If we don't quite see this happening yet, we'll see it happening as the year wears on. Second, tight money policies and oil have picked our pockets. The oil potentates, for example, are exacting a tribute of about \$25 billion a year. And this is money that isn't coming back into our economy.

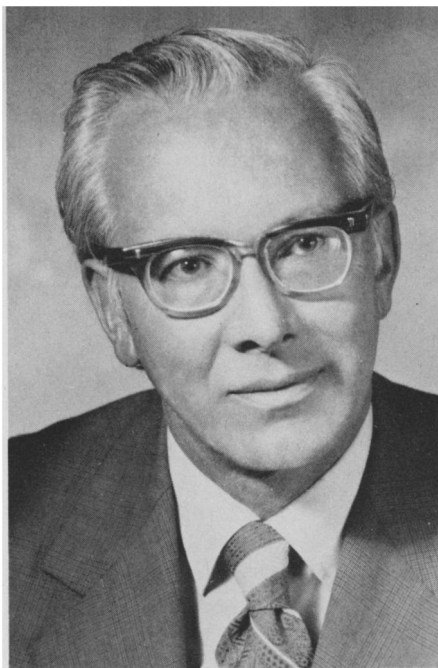
S: Faisal's tax, I believe you called it.

H: Right. These blows against the economy have put us into a considerable economic tailspin. As one result, unemployment is rising by leaps and bounds. Now it's time to curb inflation by promoting economic expansion. One of the ways to do this is to increase output per man-hour. Another way is to increase capital spending by expanding our industrial plant and equipment, thus improving our capacity to produce. Recession is the enemy of productivity, the enemy of capital spending. As we begin to expand, business will find that its output per man-hour is rising. This will encourage business to invest even more in plant and equipment. As this happens, it becomes easier to avoid the problems of shortages and bottlenecks and, in the long run, to subdue inflation.

S: Do you feel that our newspapers and TV stations may be creating in the public mind an economic "panic reaction" because of daily stories and telecasts that feature such things as joblessness, upward price spirals, governmental uncertainties and ambivalence, and lengthening welfare lines? Or is it essential that we frequently be reminded of the seriousness and the economic complexities that characterize the mid-1970s?

H: You've asked a two-part question. Let me give you a two-part answer. First of all, the media love bad news. And they're giving us an overdose of bad news these days. At the same time, it's terribly important for us to face up to our problems. One of the big difficulties in the Nixon administration was that we continually were fed pabulum and honey about the economy. Everything was given a golden glow.

I'll never forget when President-elect John F. Kennedy announced my appointment as his economic adviser late in 1960. We were about to go out on



Walter Heller

the veranda to face the media for our first press conference. He asked what I was going to say and I said, "Well, Senator, I'm going to tell them that after several years of slack and after a numbers of years of slow growth and after seven months of recession. . . ."

He stopped me right there. "Do you have to use the word 'recession,' Walter?"

This was my first little give-and-take with the President-to-be. I said, "Look, we can't solve our problems until we face up to them. Everybody is calling it a recession except the defeated and the successful Presidential candidates and I think it's high time we faced up to the facts. The shortages show it."

"Okay," he said, "so it's a recession."

I do think there is a line between realism and pessimism that has to be recognized, so that's why I'm responding somewhat ambivalently to your question.

I believe in realism. I believe we ought to face up to our problems. But it is perfectly true that after a long period of being lulled or bamboozled about the seriousness of our economic problems by the Nixon administration, the media have now gone to the opposite extreme and are pressing the panic button. Common sense lies somewhere between panic and golden-glow optimism. The Ford administration is trying to face up to problems of the present, and before this is printed we'll know whether Ford and his associates really have faced up to the economic facts of life.

S: As I remember John Maynard Keynes's theories from the 1930s, his

ideas were that the economy could combat unemployment by lowering taxes and interest rates to stimulate production and spending. Conversely, inflation presumably could be cooled by higher taxes and increased interest rates. Is this an acceptable simplified statement of Keynes's formula?

H: Yes. It is simplified, but it is also acceptable.

S: If such is the case, then, Walter, are Keynes's ideas still valid after thirty-some years?

H: They're valid, but, necessarily, with considerable qualification in the light of passing years and of past experience. I would say that Keynesian economics is, in a very real sense, a victim of its own success. Lord Keynes was prescribing for a world of deep depression that you and I experienced as 20-year-olds in the thirties.

S: Keynes actually enunciated many of his ideas early in the Roosevelt administration, as I recall.

H: Yes, although his great book on employment theory came out in 1936. It was Lord Keynes's idea that we had to stimulate the economy by the positive use of our monetary weapons. These were four in number: federal reserve policies of expanding the money supply and lowering interest rates, and fiscal policies of tax cuts and spending boosts. Keynes's theories had a great deal to do with the fact that we shall never again see a truly severe depression. Thanks to Keynes's views, in the years since World War II, unemployment has never gone above 7%. It will this year, but this will be the first time this has happened in the postwar period.

At the same time, modern Keynesians have recognized that the full-employment zone is also a zone of endemic inflation. A full-employment economy is also inflation-prone. There is a trade-off, a trade-off that has been worsening.

As far as full employment and accompanying inflation are concerned, I think that it's fair to say to the public, "You never were promised a rose garden without thorns."

But, of course, the public is coming back and saying to us, "Now wait a minute. We haven't got the rose garden, because prosperity has ebbed, but we still have inflation. All we've got left is the thorns."

The truth of the matter is very simple: The world has become more inflationary, and this condition requires some modifications of Keynes's theories. Today we have a great deal of what economists call *structural* infla-

tion. This is inflation that comes from outside sources – for example, the oil price explosion, two successive years of food crop failures, and great and increasing pressure in 1973-74 on worldwide raw material sources. These conditions are going to require a period of adjustment and higher inflation than we have known in the past. This new worldwide “mix” is something Keynes had no cause to foresee 40 years ago.

S: Your explanations are very helpful. I’m particularly interested in getting your reaction to this question: At present we are suffering from a more or less stagnant economy. At the same time, inflation has caused an increase in excess of 20% in the cost of living during the last 24 months. I believe it was the English people who coined the term “stagflation” to describe the phenomenon of low production and increasing inflation. Has the U.S. ever before suffered from stagflation?

H: Yes. The 1969-71 situation was a portent of stagflation in 1973-74. At that time, as the result of a bipartisan policy started by Lyndon Johnson to increase taxes, tighten money, and squeeze the economy, continued in spades by President Nixon and the Federal Reserve, there was a synthetic recession. By that I mean we had a recession in 1969-71 that actually was generated by government policies.

S: Contrived, would you say?

H: Yes. It was deliberately brought on by policies designed to tighten the budget, to run up a big surplus in the federal budget (which people often forget), and at the same time to tighten money and to raise interest rates. To the dismay of policy makers, economists, and the public, however, the contrived recession didn’t bring the inflation rate down. Labor’s expectations were high, and there was a lot of catching up to do with respect to price increases. Even though the economy was suffering from too few dollars chasing too many goods, and even though costs were falling, inflation continued.

It was the somewhat less intense stagflation of 1969-71 that led to Mr. Nixon’s shock treatment of August, 1971. This was when he put on the wage/price freeze. We were caught at that time in an inflation psychosis and he used shock therapy to shake us out of it. Mr. Nixon then frittered away most of the merit in the freeze by the way the wage/price controls were managed.

S: Do you see any value in some type of a wage/price freeze in the foreseeable future; let’s say within the

current year?

H: I think the time for a wage/price freeze is past. Of course, we do have a wage/price watchdog: the Council on Wage and Price Stability. But it’s a watchdog without teeth. It can jawbone you to death, but it has no bite. Many of us feel that the council should be given powers to subpoena records and suspend outsized wage and price increases. Also, and in really flagrant cases – in certified outrages – it ought to be given power to roll back or to deny price increases, but only in the area of big business and big labor where competition is not working well. In other words, where competition is a good policeman, I would let the market work, not try to control it.

S: Let me get this straight. You say you would accept only very selective controls?

H: I would not even call them controls. I would call them restraints. But let me go back for a moment to the question of our current stagflation. I think it’s important for us to recognize three major sources of inflation. Number one is the kind most people call an “excess demand” inflation: too many dollars chasing too few goods. We haven’t had much of this type of inflation since the end of 1973 because we were squeezing the economy.

The second kind is “cost-push” inflation. Here rising wages push up costs, which then boost prices in the final product. We have some of this escalation today, but I think it will be easing in 1975.

The third kind of inflation could be called “external shock” or commodity inflation. This is a new development since 1973-74. It is a kind of inflation that comes from the oil cartel holding us virtually at gunpoint to get their oil prices, from the rise of world food prices, and the rise in world raw materials prices. Except for a brief spasm in the Korean War, we have not experienced this sort of run-up before. Worldwide commodity price increases are what make this stagflation so much worse than the 1969-71 stagflation. However, their influence will be easing during 1975, and consequently we will be better off toward the end of the year.

S: Fourteen months ago you wrote in *Today’s Education*, “We are in a boom today.” You also foresaw in the same article the likelihood of the present recession. What “distant early warning signals” did you see that alarmed you? And why do you think these timely warnings were generally

ignored by persons in positions of influence?

H: First, in the face of mounting inflation in late 1972 and early 1973, positive moves were taken to cool off the overheated economy. The Federal Reserve pumped interest rates up to double-digit levels and tightened the money supply. Also, Mr. Nixon brought in a very tight budget. You may recall that the budget he proposed in January, 1973, cut social programs very sharply.

I thought it was miserable social policy, but as an economist I had to say that it was the correct economic policy to tighten up the budget. I would rather have done it from the tax side than by cutting good government programs, but it was the right government policy to try to cool off an overheated economy. Furthermore, it was apparent that this was going to cause an economic slowdown in 1974. Then the “oilgarchs” superimposed their embargo on a shrinking economy. This price gouging has pulled about \$25 billion out of the pockets of consumers. When I added those three things together – interest rates, a tight budget, and the oil squeeze – it was very plain that 1974 was going to be a year of substantial slowdown.

S: You’ll recall, Walter, that I also asked why you think that some of your warnings were ignored by persons of influence?

H: Part of it is a by-product of Watergate. The Nixon administration was otherwise engaged. Part of it is just plain self-delusion. It was unconscionable that members of the Nixon team were saying, “This is just an energy spasm; this is a phantom recession; this will soon pass.” They fooled themselves and the country into thinking that the moment the Arab oil began flowing again the economy would bounce back. As a result, my urging that money not be tightened too much, and my call for a modest tax cut to restore the position of those who had been most badly victimized by inflation, went entirely unheeded. At the summit conference last September, when we had a splendid opportunity to talk directly to President Ford, we were very much impressed by the way he listened and did his homework. But even so, economists’ warnings did not seem to sink in. By then, you remember, I was forecasting the worst recession since the Great Depression. Policy makers just didn’t want to believe that the situation would deteriorate as fast as it has. So it was a combination of Watergate, self-delusion, and poor interpretation of

economic forecasts on their part.

S: Let me bring up a related matter. Disregarding any political realities that might impede action by the federal government, what would you recommend that the President do to improve economic trends if you were still the Chief Executive's economic adviser? What can he do *now*?

H: My first advice would have a bearing on the Federal Reserve system. The administration could urge King Arthur Burns and his knights of the Federal Reserve round table to ease up on the monetary brakes. They have been very slow in lowering interest rates. It's high time to provide a more favorable environment for housing recovery and for installment purchases. Next, and equally important, I would urge the President to provide a tax cut of no less than \$20 billion (not a small cut of five to 10 billion), most of it going to wage earners of the lower- and middle-income groups.

S: Why do you feel so strongly about a tax cut when the government already is operating in the red?

H: First of all, because the economy is sliding down so fast that we have unused manpower, unused machines, and unused factories. This is incongruous in a \$1,500 billion economy. Once released, this enormous potential purchasing power would quickly lead to increased production, more jobs, and higher incomes. Very little of it would show up as higher prices. It's often said that there's no such thing as a free lunch—it's a cliché. But the truth is that when the economy is this far down and has so much slack, so many unused resources, there really *is* a free lunch. A whopping tax reduction would help relieve people who've been hit hard by inflation and would also increase economic activity without touching off new inflation.

At the same time, I would urge President Ford to put some starch into his Council on Wage and Price Stability. Also, having given labor a sizable tax cut, he should make an appeal to labor for moderation in its wage demands. I would specifically design the tax cut, by the way, so that it would represent a net increase of about 2% in wages. The President could then say to labor, "We're giving you 2% more through the tax table. I therefore expect you to take 2% less at the bargaining table." This way you would help restore some real income to labor through the tax mechanism and not add pressure for salary increases on the employer.

S: While we're on the topic of tax

"The most important single short-run thing that the federal government can do to ease educational finance problems is to improve economic health, so that the flow of revenues into state and local coffers will be restored."

cuts in 1975, let me ask this: Do certain major tax giveaways and tax shelters need to be eliminated as we contemplate tax cuts?

H: You have put your finger on a problem that is pervasive and unrelenting. The problem of tax reform is something we should be working on year in, year out. Indeed, when you provide tax shelters, let's say for oil, or real estate partnerships, or cattle, or "hobby" farms, you are in effect saying to the market system, "We will give you some subsidies for putting your money into these particular types of activity." Such tax giveaways not only do an injustice to those who can't take advantage of them, they also create glaring inequities. Equally bad is the way they distort the flow of our resources and make the economy less efficient.

S: You've spoken of unjust, unfair, or inequitable tax shelters. What would be one or two examples of conspicuous abuses?

H: The oil industry's tax shelters are examples of preferential treatment. For example, if you invest in an oil well or in oil exploration, you are allowed to deduct all the drilling and development costs as an expense. You don't have to depreciate it over a period of years. Also, you get a 22% allowance on your income for depletion. Without going into detail, this has been giving the oil industry a tax benefit of two or three billion dollars a year. This loss to the treasury has to be made up by other taxpayers. Another example is real estate partnerships. You can invest in an apartment building, take depreciation, deduct it against your other income, and thus escape taxes on this other income.

S: Let me ask a rather folksy question. If you had \$10,000 to invest at the present time, and you didn't have debts or financial problems, what would you

do with this sum if you wanted to make a prudent investment?

H: This is the kind of question I usually duck. I would say I'm an economic analyst, not a psychoanalyst, and don't give advice on the stock market. But I'm going to break all my rules and suggest that in the Year of our Lord 1975, when the economy's going to be touching bottom, with prospects of improvement in 1976, an investment in a carefully selected group of stocks, for someone who has no debts or financial needs, could pay off very handsomely in the next few years. Stocks are selling far below their normal values of recent years and represent a very attractive investment.

S: As you know, a large majority of *Kappan* readers are professional educators. What governmental action do you suppose might be taken to ease the problems of school finance during a period of economic stress? While you're responding, please react to the position the National Education Association assumed 18 months or two years ago, urging that one-third of the support for our schools come from the federal government.

H: Let me take the second one first. I have supported the NEA position on federal funding because education is a national resource, a national investment. I worked with the NEA back in 1958-59 and helped them get across the concept of education as an investment. It will pay off for the national government to take on a higher proportion of total educational financing.

I also favor increased support to stimulate the economy. The recession and inflation are putting a very considerable squeeze now on state and local governments. The most important single short-run thing that the federal government can do to ease educational finance problems is to improve economic health, so that the flow of revenues into state and local coffers will be restored.

Couple the two things, then, and continue revenue sharing (in which I have a certain paternal interest), at least at the present level but with some expansion so as to recognize the growing size of the economy. I think the federal government would thereby be assuming a fair share of educational finance.

S: A last question or two about our economic future. For many years the United States has been committed to the so-called "growth doctrine." As I understand it, this doctrine maintains that we must produce more and more things to prosper: more cars, more

refrigerators, more air conditioners, recently more snowmobiles. This might be crudely diagrammed to resemble an expanding cone with its point down.

A number of persons feel that we now must move from this growth doctrine toward the concept of a "steady state" — one that has more ecological balance. Persons like Gabor, Salk, Seaborg, Platt, Boulding, Toffler, and Heilbroner are among those who have written in this vein. This line of thinking implies a changing model of the economy, where the steady state is achieved by 1980 after a century of expansion. Do you see the steady state as a likelihood in this century or soon thereafter? Will we develop a recycling and "string-saving society," as forecast by persons such as Seaborg and Mead? This would be a society in which we become *users* rather than *consumers* of goods. Our economy would be one in which today's wastes, through reuse, become primary resources, while virgin materials, such as iron, coal, oil, and forests, become backup reserves.

H: You have poured out enough questions to get me started on my next book! But I'll try to answer in a few well-chosen words. Actually, I've already written one monograph on this very subject, to which I would be happy to refer your readers. *Economic Growth and Environmental Quality: Collision or Coexistence?* is addressed precisely to this question. I take what I like to think is a balanced view between the demands of growth and the demands of the environment.

S: As I recall, you argued in your book that we need some continuation of the growth concept so that we can clean up some of the problems of pollution and resource distribution.

H: That's correct. It is not really an either/or question. We're not at any "Club of Rome" limits to the world's natural resources. I don't mean to say that there are no limits to our resources, but we're not near them. The question thus becomes: Can we reconcile environmental demands and the demands of economic growth? If we stop growing, we run into enormous tensions. How, for instance, do we improve the lot of the poor? Thus far we've always done it by economic growth. We do *some* redistributing of wealth from the upper- to the lower-income group, but what really makes the system go, what really takes the pressure off and gives us some ability to create greater equality of opportunity, is economic growth. I'm just not prepared to say that we should

give up these assets in an effort to protect the environment.

What I am prepared to say is that we should readjust our economic system to make pollution, environmental degradation, and excessive wastage of resources expensive. Make despoliation unprofitable and make conservation and protection profitable. It can be done, primarily by taxation. We can charge for the misuse of the air and the water by "effluent" taxes and by charges on noxious discharges into the air. I say, let's steer the self-interest of the producer and the consumer in the right direction.

I am sorry to say that I do not believe we can count on individual morality to stop environmental abuse, nor dare we rely on the hope that people's morality will change. I would rather rely on our *collective* morality; on seeing to it that we adopt rules and measures that will guide people in the right direction — to conserve and to de-pollute. We must count on the incentive system rather than simply an appeal to morality.

S: It would seem then that any heightening of consciousness in the immediate future will be seasoned with enlightened self-interest.

H: That is correct. I agree with all the implications of your question. We *must* learn to recycle or we will drown in our waste; we must learn to protect the environment or else it's growth for what? We must learn to manage our affairs in such a way that the resources of the world, both intangible and tangible, will be conserved. But in order to do that without a totalitarian regime, we must use the market system's penalties and rewards. That's not a very romantic or heroic answer, but I think it's the answer that will keep Spaceship Earth cruising a lot longer than the Club of Rome might think.

S: Eventually, perhaps 50 or 100 years hence, do you see a "steady state" emerging on the basis of the kind of common sense you speak of?

H: Eventually we will have to slow down our rate of growth; but I don't think we have to give it up. We should place more emphasis on growth in the quality of life, too; in other words, less emphasis on things of the kind you listed and more emphasis on the environment and services. And we'll have to recognize intangibles such as "excellence" as part of our gross national product. We're going to have to develop a concept of gross national *welfare*, as well as GNP.

S: Let us look further into the future of the economy, beyond the year 2000. Do you feel that our children and our grandchildren as adults will live in what I've sometimes called a period of "dynamic contraction," a post-affluent society? This might be a world in some ways like the one that we knew as boys in 1920 or 1930, one that is less technologically sophisticated. Dynamic contraction presumably would bring us to an economic system in balance with the biosphere, a system less materialistic, less self-indulgent, more disciplined, and perhaps more prone to de-market than to market the world's raw materials in order to protect the world's welfare.

Can you see us in the long pull, as we move from the "limits of growth" concern that the Club of Rome voiced to a newer view of "mankind at the turning point" where there may be some basic and perhaps permanent changes in our way of life?

H: The distant economic future is, of course, extremely difficult to foresee. Let me say that I think we, as mortals, should heed the lessons of history. We have at points been very discouraged about the ability of resources to support an expanding population, and each time we have surprised ourselves by releasing a new flow of resources. The limits to growth have always proved to be farther out than we had anticipated. Again, it depends on how successful we are in curbing population growth. If the world finds a way to slow down materially and eventually stabilize population, the answer to your question would be very different, indeed, than if we continue to experience the present rate of population growth throughout the world.

S: In the long run, then, humankind will determine whether we have a humane, reasonably affluent society or whether we slide over into the twilight of a post-affluent society.

H: That is exactly the way I would perceive it. With due concern for the biosphere, we are going to learn how to wrest more resources from sun and sand, to develop the potential for good that resides in the atom. If we learn to balance the population side of the equation, I don't think we need to go into a drastic period of permanent "dynamic contraction." However, let's be realistic. The world has not yet shown an unusual capacity to plan and manage its affairs. It will require the best and most tireless human effort to end our present undisciplined ways, to avoid leaving a plundered planet to our posterity. □